

# RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical  
Information Center (STIC) no errors detected.

Application Serial Number: 10/086,177C  
Source: 1 Fw/b  
Date Processed by STIC: 10/19/06

# ***ENTERED***



IFW16

## RAW SEQUENCE LISTING

DATE: 10/19/2006

PATENT APPLICATION: US/10/086,177C

TIME: 08:31:36

Input Set : A:\80421-1.APP

Output Set: N:\CRF4\10192006\J086177C.raw

*see  
pg 6-7*

3 <110> APPLICANT: Tudan, Christopher R.  
 4 Merzouk, Ahmed  
 5 Arab, Lakhdar  
 6 Saxena, Geeta  
 7 Eaves, Connie J.  
 8 Cashman, Johanne  
 9 Clark-Lewis, Ian  
 10 Salari, Hassan  
 11 University of British Columbia  
 12 Chemokine Therapeutics Corporation  
 14 <120> TITLE OF INVENTION: CXC Chemokine Receptor 4 Agonist Peptides  
 16 <130> FILE REFERENCE: 080421-000100US  
 18 <140> CURRENT APPLICATION NUMBER: US 10/086,177C  
 19 <141> CURRENT FILING DATE: 2002-02-26  
 21 <150> PRIOR APPLICATION NUMBER: CA 2,305,036  
 22 <151> PRIOR FILING DATE: 2000-04-12  
 24 <150> PRIOR APPLICATION NUMBER: US 60/232,425  
 25 <151> PRIOR FILING DATE: 2000-09-14  
 27 <150> PRIOR APPLICATION NUMBER: CA 2,335,109  
 28 <151> PRIOR FILING DATE: 2001-02-23  
 30 <150> PRIOR APPLICATION NUMBER: US 09/835,107  
 31 <151> PRIOR FILING DATE: 2001-04-12  
 33 <160> NUMBER OF SEQ ID NOS: 214  
 35 <170> SOFTWARE: PatentIn version 3.3  
 37 <210> SEQ ID NO: 1  
 38 <211> LENGTH: 67  
 39 <212> TYPE: PRT  
 40 <213> ORGANISM: Homo sapiens  
 42 <220> FEATURE:  
 43 <223> OTHER INFORMATION: human SDF-1alpha  
 45 <400> SEQUENCE: 1  
 46 Lys Pro Val Ser Leu Ser Tyr Arg Cys Pro Cys Arg Phe Phe Glu Ser  
 47 1 5 10 15  
 48 His Val Ala Arg Ala Asn Val Lys His Leu Lys Ile Leu Asn Thr Pro  
 49 20 25 30  
 50 Asn Cys Ala Leu Gln Ile Val Ala Arg Leu Lys Asn Asn Asn Arg Gln  
 51 35 40 45  
 52 Val Cys Ile Asp Pro Lys Leu Lys Trp Ile Gln Glu Tyr Leu Glu Lys  
 53 50 55 60  
 54 Ala Leu Asn  
 55 65  
 57 <210> SEQ ID NO: 2  
 58 <211> LENGTH: 93

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59 &lt;212&gt; TYPE: PRT

60 &lt;213&gt; ORGANISM: Homo sapiens

62 &lt;220&gt; FEATURE:

63 &lt;223&gt; OTHER INFORMATION: human SDF-1 precursor, PBSF

65 &lt;400&gt; SEQUENCE: 2

```

66 Met Asn Ala Lys Val Val Val Val Leu Val Leu Val Leu Thr Ala Leu
67 1          5          10          15
68 Cys Leu Ser Asp Gly Lys Pro Val Ser Leu Ser Tyr Arg Cys Pro Cys
69          20          25          30
70 Arg Phe Phe Glu Ser His Val Ala Arg Ala Asn Val Lys His Leu Lys
71          35          40          45
72 Ile Leu Asn Thr Pro Asn Cys Ala Leu Gln Ile Val Ala Arg Leu Lys
73          50          55          60
74 Asn Asn Asn Arg Gln Val Cys Ile Asp Pro Lys Leu Lys Trp Ile Gln
75 65          70          75          80
76 Glu Tyr Leu Glu Lys Ala Leu Asn Lys Arg Phe Lys Met
77          85          90

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79 &lt;210&gt; SEQ ID NO: 3

80 &lt;211&gt; LENGTH: 93

81 &lt;212&gt; TYPE: PRT

82 &lt;213&gt; ORGANISM: Homo sapiens

84 &lt;220&gt; FEATURE:

85 &lt;223&gt; OTHER INFORMATION: human SDF-1beta

87 &lt;400&gt; SEQUENCE: 3

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88 Met Asn Ala Lys Val Val Val Val Leu Val Leu Val Leu Thr Ala Leu
89 1          5          10          15
90 Cys Leu Ser Asp Gly Lys Pro Val Ser Leu Ser Tyr Arg Cys Pro Cys
91          20          25          30
92 Arg Phe Phe Glu Ser His Val Ala Arg Ala Asn Val Lys His Leu Lys
93          35          40          45
94 Ile Leu Asn Thr Pro Asn Cys Ala Leu Gln Ile Val Ala Arg Leu Lys
95          50          55          60
96 Asn Asn Asn Arg Gln Val Cys Ile Asp Pro Lys Leu Lys Trp Ile Gln
97 65          70          75          80
98 Glu Tyr Leu Glu Lys Ala Leu Asn Lys Arg Phe Lys Met
99          85          90

```

101 &lt;210&gt; SEQ ID NO: 4

102 &lt;211&gt; LENGTH: 17

103 &lt;212&gt; TYPE: PRT

104 &lt;213&gt; ORGANISM: Artificial Sequence

106 &lt;220&gt; FEATURE:

107 &lt;223&gt; OTHER INFORMATION: synthetic CXCR4 agonist SDF-1(1-17), CTCE9902

109 &lt;400&gt; SEQUENCE: 4

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110 Lys Pro Val Ser Leu Ser Tyr Arg Cys Pro Cys Arg Phe Phe Glu Ser
111 1          5          10          15

```

112 His

115 &lt;210&gt; SEQ ID NO: 5

116 &lt;211&gt; LENGTH: 6

117 &lt;212&gt; TYPE: PRT

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118 <213> ORGANISM: Artificial Sequence
120 <220> FEATURE:
121 <223> OTHER INFORMATION: CXCR4 agonist sequence motif within 20 amino acids
122     of the N-terminus
124 <400> SEQUENCE: 5
125 Arg Phe Phe Glu Ser His
126 1         5
128 <210> SEQ ID NO: 6
129 <211> LENGTH: 9
130 <212> TYPE: PRT
131 <213> ORGANISM: Artificial Sequence
133 <220> FEATURE:
134 <223> OTHER INFORMATION: synthetic SDF-1 peptide analogue CXCR4 agonist
136 <400> SEQUENCE: 6
137 Lys Pro Val Ser Leu Ser Tyr Arg Cys
138 1         5
140 <210> SEQ ID NO: 7
141 <211> LENGTH: 9
142 <212> TYPE: PRT
143 <213> ORGANISM: Artificial Sequence
145 <220> FEATURE:
146 <223> OTHER INFORMATION: synthetic CXCR4 agonist SDF-1(1-9)-2-C9/C9-cysteine dimer,
147     CTCE9901
149 <220> FEATURE:
150 <221> NAME/KEY: MISC_FEATURE
151 <222> LOCATION: (7)..(7)
152 <223> OTHER INFORMATION: dimerised by formation of a disulfide bond between two Cys
153     residues in position 7 of two SEQ ID NO:7 peptides
155 <400> SEQUENCE: 7
156 Lys Pro Val Ser Leu Ser Tyr Arg Cys
157 1         5
159 <210> SEQ ID NO: 8
160 <211> LENGTH: 10
161 <212> TYPE: PRT
162 <213> ORGANISM: Artificial Sequence
164 <220> FEATURE:
165 <223> OTHER INFORMATION: portion of synthetic CXCR4 agonist SDF-1(1-9)-2
166     (Compound #3)
168 <220> FEATURE:
169 <221> NAME/KEY: MOD_RES
170 <222> LOCATION: (10)..(10)
171 <223> OTHER INFORMATION: Xaa = Lys whose epsilon amino group forms a covalent amide
172     bond with the alpha amino group of Cys at position 9 of
173     KPVSLSYRC (SEQ ID NO:9), thereby forming a dimer
175 <400> SEQUENCE: 8
W--> 176 Lys Pro Val Ser Leu Ser Tyr Arg Cys Xaa
177 1         5         10
179 <210> SEQ ID NO: 9
180 <211> LENGTH: 9

```

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181 <212> TYPE: PRT
182 <213> ORGANISM: Artificial Sequence
184 <220> FEATURE:
185 <223> OTHER INFORMATION: portion of synthetic CXCR4 agonist SDF-1(1-9)-2
186     (Compound #3)
188 <220> FEATURE:
189 <221> NAME/KEY: MOD_RES
190 <222> LOCATION: (9)..(9)
191 <223> OTHER INFORMATION: Xaa = Cys whose alpha amino group forms a covalent amide
192     bond with the epsilon amino group of Lys at position 10
193     of KPVSLSYRCX (SEQ ID NO:8), thereby forming a dimer
195 <400> SEQUENCE: 9 ,
W--> 196 Lys Pro Val Ser Leu Ser Tyr Arg Xaa
197 1          5
199 <210> SEQ ID NO: 10
200 <211> LENGTH: 9
201 <212> TYPE: PRT
202 <213> ORGANISM: Artificial Sequence
204 <220> FEATURE:
205 <223> OTHER INFORMATION: portion of synthetic CXCR4 agonist dimer of SDF-1 amino
206     acids 1-8
208 <220> FEATURE:
209 <221> NAME/KEY: MOD_RES
210 <222> LOCATION: (9)..(9)
211 <223> OTHER INFORMATION: Xaa = Lys whose epsilon amino group forms a covalent amide
212     bond with the alpha amino group of Arg at position 8 of
213     KPVSLSYX (SEQ ID NO:11), thereby forming a dimer
215 <400> SEQUENCE: 10
W--> 216 Lys Pro Val Ser Leu Ser Tyr Arg Xaa
217 1          5
219 <210> SEQ ID NO: 11
220 <211> LENGTH: 8
221 <212> TYPE: PRT
222 <213> ORGANISM: Artificial Sequence
224 <220> FEATURE:
225 <223> OTHER INFORMATION: portion of synthetic CXCR4 agonist dimer of SDF-1 amino
226     acids 1-8
228 <220> FEATURE:
229 <221> NAME/KEY: MOD_RES
230 <222> LOCATION: (8)..(8)
231 <223> OTHER INFORMATION: Xaa = Arg whose alpha amino group forms a covalent amide
232     bond with the epsilon amino group of Lys at position 9
233     of KPVSLSYRX (SEQ ID NO:10), thereby forming a dimer
235 <400> SEQUENCE: 11
W--> 236 Lys Pro Val Ser Leu Ser Tyr Xaa
237 1          5
239 <210> SEQ ID NO: 12
240 <211> LENGTH: 30
241 <212> TYPE: PRT

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242 <213> ORGANISM: Artificial Sequence  
 244 <220> FEATURE:  
 245 <223> OTHER INFORMATION: synthetic CXCR4 agonist SDF-1(1-14)-(G)-3-SDF-1(55-67)  
 246 acid  
 248 <220> FEATURE:  
 249 <221> NAME/KEY: MISC\_FEATURE  
 250 <222> LOCATION: (17)..(17)  
 251 <223> OTHER INFORMATION: Gly in position 17 may be present or absent  
 253 <400> SEQUENCE: 12  
 254 Lys Pro Val Ser Leu Ser Tyr Arg Cys Pro Cys Arg Phe Phe Gly Gly  
 255 1 5 10 15  
 256 Gly Leu Lys Trp Ile Gln Glu Tyr Leu Glu Lys Ala Leu Asn  
 257 20 25 30  
 259 <210> SEQ ID NO: 13  
 260 <211> LENGTH: 31  
 261 <212> TYPE: PRT  
 262 <213> ORGANISM: Artificial Sequence  
 264 <220> FEATURE:  
 265 <223> OTHER INFORMATION: synthetic CXCR4 agonist SDF-1(1-14)-(G)-4-SDF-1(55-67)  
 266 acid, CTCE0013  
 268 <220> FEATURE:  
 269 <221> NAME/KEY: MISC\_FEATURE  
 270 <222> LOCATION: (17)..(18)  
 271 <223> OTHER INFORMATION: Gly in positions 17 and/or 18 may independently be  
 272 present or absent  
 274 <400> SEQUENCE: 13  
 275 Lys Pro Val Ser Leu Ser Tyr Arg Cys Pro Cys Arg Phe Phe Gly Gly  
 276 1 5 10 15  
 277 Gly Gly Leu Lys Trp Ile Gln Glu Tyr Leu Glu Lys Ala Leu Asn  
 278 20 25 30  
 280 <210> SEQ ID NO: 14  
 281 <211> LENGTH: 30  
 282 <212> TYPE: PRT  
 283 <213> ORGANISM: Artificial Sequence  
 285 <220> FEATURE:  
 286 <223> OTHER INFORMATION: synthetic CXCR4 agonist SDF-1(1-14)-(G)-3-SDF-1(55-67)  
 287 amide  
 289 <220> FEATURE:  
 290 <221> NAME/KEY: MISC\_FEATURE  
 291 <222> LOCATION: (17)..(17)  
 292 <223> OTHER INFORMATION: Gly in position 17 may be present or absent  
 294 <220> FEATURE:  
 295 <221> NAME/KEY: MOD\_RES  
 296 <222> LOCATION: (30)..(30)  
 297 <223> OTHER INFORMATION: AMIDATION  
 299 <400> SEQUENCE: 14  
 300 Lys Pro Val Ser Leu Ser Tyr Arg Cys Pro Cys Arg Phe Phe Gly Gly  
 301 1 5 10 15  
 302 Gly Leu Lys Trp Ile Gln Glu Tyr Leu Glu Lys Ala Leu Asn

RAW SEQUENCE LISTING ERROR SUMMARY  
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**Please Note:**

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:8; Xaa Pos. 10  
Seq#:9; Xaa Pos. 9  
Seq#:10; Xaa Pos. 9  
Seq#:11; Xaa Pos. 8  
Seq#:31; Xaa Pos. 9  
Seq#:32; Xaa Pos. 8  
Seq#:35; Xaa Pos. 2,5  
Seq#:36; Xaa Pos. 2,5  
Seq#:39; Xaa Pos. 20  
Seq#:40; Xaa Pos. 20  
Seq#:41; Xaa Pos. 28  
Seq#:42; Xaa Pos. 28  
Seq#:43; Xaa Pos. 20  
Seq#:44; Xaa Pos. 20  
Seq#:45; Xaa Pos. 28  
Seq#:46; Xaa Pos. 28  
Seq#:50; Xaa Pos. 2,5  
Seq#:51; Xaa Pos. 2,5,14  
Seq#:52; Xaa Pos. 1  
Seq#:53; Xaa Pos. 2,5  
Seq#:54; Xaa Pos. 2,5,14  
Seq#:55; Xaa Pos. 1  
Seq#:58; Xaa Pos. 14  
Seq#:59; Xaa Pos. 1  
Seq#:61; Xaa Pos. 14  
Seq#:62; Xaa Pos. 1  
Seq#:64; Xaa Pos. 14  
Seq#:65; Xaa Pos. 1  
Seq#:68; Xaa Pos. 1  
Seq#:70; Xaa Pos. 14  
Seq#:71; Xaa Pos. 1  
Seq#:73; Xaa Pos. 14  
Seq#:74; Xaa Pos. 1  
Seq#:76; Xaa Pos. 14  
Seq#:77; Xaa Pos. 1  
Seq#:79; Xaa Pos. 14  
Seq#:80; Xaa Pos. 1  
Seq#:82; Xaa Pos. 14  
Seq#:83; Xaa Pos. 1  
Seq#:85; Xaa Pos. 14  
Seq#:86; Xaa Pos. 1  
Seq#:88; Xaa Pos. 14  
Seq#:89; Xaa Pos. 1  
Seq#:91; Xaa Pos. 14

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Seq#:92; Xaa Pos. 1  
Seq#:94; Xaa Pos. 14  
Seq#:95; Xaa Pos. 1  
Seq#:97; Xaa Pos. 14  
Seq#:98; Xaa Pos. 1  
Seq#:100; Xaa Pos. 14  
Seq#:101; Xaa Pos. 1



## VERIFICATION SUMMARY

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Input Set : A:\80421-1.APP

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L:176 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8 after pos.:0  
L:196 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9 after pos.:0  
L:216 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10 after pos.:0  
L:236 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11 after pos.:0  
L:746 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:31 after pos.:0  
L:767 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:32 after pos.:0  
L:773 M:300 W: (50) Intentionally skipped Sequence, : Sequence Id (33) SEQUENCE:  
L:778 M:300 W: (50) Intentionally skipped Sequence, : Sequence Id (34) SEQUENCE:  
L:824 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:35 after pos.:0  
L:873 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:36 after pos.:0  
L:966 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:39 after pos.:16  
L:1003 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:40 after pos.:16  
L:1035 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:41 after pos.:16  
L:1072 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:42 after pos.:16  
L:1104 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:43 after pos.:16  
L:1141 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:44 after pos.:16  
L:1173 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:45 after pos.:16  
L:1210 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:46 after pos.:16  
L:1341 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:50 after pos.:0  
L:1382 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:51 after pos.:0  
L:1413 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:52 after pos.:0  
L:1460 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:53 after pos.:0  
L:1501 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:54 after pos.:0  
L:1532 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:55 after pos.:0  
L:1605 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:58 after pos.:0  
L:1635 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:59 after pos.:0  
L:1689 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:61 after pos.:0  
L:1719 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:62 after pos.:0  
L:1763 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:64 after pos.:0  
L:1793 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:65 after pos.:0  
L:1882 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:68 after pos.:0  
L:1926 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:70 after pos.:0  
L:1956 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:71 after pos.:0  
L:2010 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:73 after pos.:0  
L:2040 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:74 after pos.:0  
L:2084 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:76 after pos.:0  
L:2114 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:77 after pos.:0  
L:2168 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:79 after pos.:0  
L:2198 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:80 after pos.:0  
L:2242 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:82 after pos.:0  
L:2272 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:83 after pos.:0  
L:2326 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:85 after pos.:0  
L:2356 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:86 after pos.:0  
L:2400 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:88 after pos.:0  
L:2430 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:89 after pos.:0  
L:2484 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:91 after pos.:0  
L:2514 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:92 after pos.:0  
L:2558 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:94 after pos.:0

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L:2588 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:95 after pos.:0  
L:2642 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:97 after pos.:0  
L:2672 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:98 after pos.:0  
L:2716 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:100 after pos.:0